CLAIMS

1. A PTFE tube comprising external roots and peaks, which tube is obtainable from a non-convoluted tube having an original wall thickness W_0 and an internal diameter ID by a process in which a region of the tube is thinned to provide external convolutions with a root wall thickness W_1, characterised in that the convoluted PTFE tube has an improved resistance to permeation of greater than 7.6% by comparison with the non-convoluted tube, the comparison being made between tubes of (i) equal internal diameter ID; and (ii) equal weight of PTFE per unit length.

2. A PTFE tube as claimed in claim 1 wherein the improved resistance to permeation by comparison with the non-convoluted tube is greater than 10%.

3. A PTFE tube as claimed in any preceeding claim wherein the improved resistance to permeation by comparison with the non-convoluted tube is greater than 20%.

4. A PTFE tube as claimed in any preceeding claim wherein the improved resistance to permeation by comparison with the non-convoluted tube is greater than 30%.

5. A PTFE tube as claimed in any preceeding claim wherein the improved resistance to permeation by comparison with the non-convoluted tube is greater than 60%.

6. A PTFE tube as claimed in any preceeding claim having a smooth internal

bore.

7. A PTFE tube as claimed in any preceeding claim, which tube is obtained from a non-convoluted tube having an original wall thickness W_0 and an internal diameter ID by a process comprising:

1. subjecting the PTFE tube to a deformation force at a temperature at or above the gel transition temperature of PTFE to produce constrained convolutions having a thinned wall W_1; and

2. cooling the PTFE tube to below the gel transition temperature whilst continuing to constrain the deformations having the thinned wall W_1 until the convolutions having the thinned wall W_1 have become stable.

8. A PTFE tube as claimed in any preceding claim, which on heating to above its gel transition temperature without a restraining force in place returns to within 20% of the tubes original wall thickness W_0 but will not do so below the gel transition temperature.

9. A method of producing a PTFE tube comprising external roots and peaks from a non-convoluted tube having an original wall thickness W_0 comprising:

1. subjecting the PTFE tube to a deformation force at a temperature at or above the gel transition temperature of PTFE to produce constrained convolutions having a thinned wall W_1; and

2. cooling the PTFE tube to below the gel transition temperature whilst continuing to constrain the deformations having the thinned wall W_1 until the convolutions having the thinned wall W_1 have become stable.

10. A method of producing a PTFE tube as claimed in claim 9, wherein the tube is placed on a mandrel and a helical tool comprising a leading end and a following end is rotated relative to the mandrel at a speed such that the leading end applies a deformation force at above the gel transition temperature and the following end applies a restraining force until the temperature has dropped below the gel transition temperature and the convolutions have become stable.

11. A method as claimed in claim 10 wherein the mandrel is a plane cylindrical mandrel.

12. A method as claimed in claims 10 or 11 wherein the following end of the helical tool is maintained at a temperature below the gel transition temperature.

13. A method as claimed in any of claims 9 to 12 wherein W_1 is less than 25% of W_0.

14. A method as claimed in claim 13 wherein W_1 is about 20% of W_0.

15. A hose assembly comprising a PTFE tube as claimed in any of claims 1 to 8, a braid and one or more end fittings.

16. Use of a PTFE tube as claimed in any of claims 1 to 8 in a hose assembly for the purpose of improving the resistance to permeation of said hose assembly.

17. Use of a PTFE tube as claimed in any of claims 1 to 8 for the manufacture of a hose assembly intended to have improved resistance to permeation.

18. A method comprising passing a fluid through a PTFE tube or hose assembly under a pressure greater than atmospheric pressure characterised in that the fluid is passed through a PTFE tube as claimed in any of claims 1 to 8 or the hose

assembly as claimed in claim 15.